

Rec'd PCT/PT 20 JUL 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



10/542789



(43) International Publication Date  
5 August 2004 (05.08.2004)

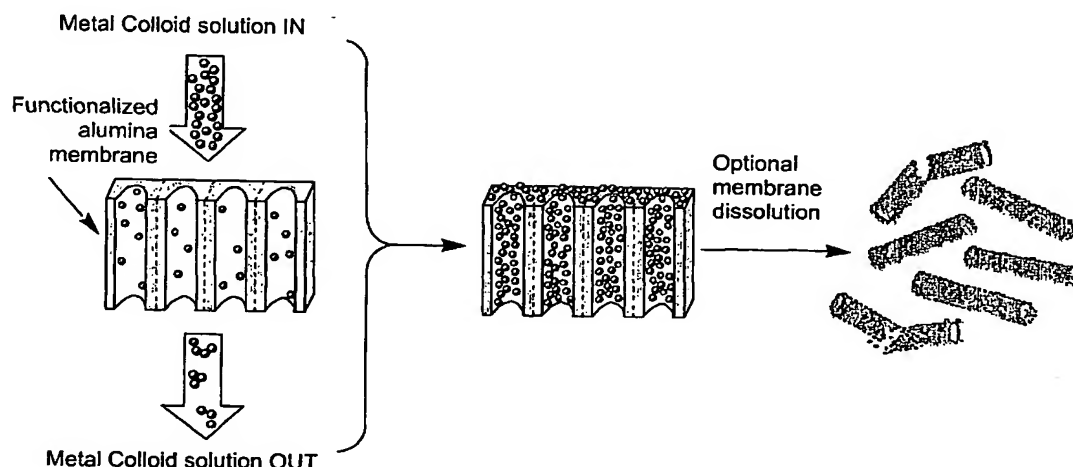
PCT

(10) International Publication Number  
WO 2004/064993 A3

- (51) International Patent Classification<sup>7</sup>: **B05D 7/22**
- (21) International Application Number: PCT/IL2004/000061
- (22) International Filing Date: 22 January 2004 (22.01.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/441,767 23 January 2003 (23.01.2003) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD FOR PREPARING NANOTUBES FROM NANOPARTICLES AND NANOTUBES PRODUCED THEREBY



(57) Abstract: The present invention provides a new method for the synthesis of a novel kind of high-surface-area structures. A substrate is provided having pores or channels functionalized with an agent capable of binding nanoparticles, said pores or channels having a cross-sectional size of from about several nanometers to about 100 microns. A colloid solution comprising stabilized nanoparticles and a solvent is passed through said substrate, so as to bind and form more than one layer of nanoparticles in the pores or channels where the bound nanoparticles spontaneously coalesce to form a coherent material having a substantially hollow structure and being composed of nanoparticles. The structures can be modified by deposition of another material, to form structures coated by the other material on their surface. The structures (with or without modification) can be separated from the porous substrate to obtain a material having a desired structure, for example a tubular structure.

WO 2004/064993 A3



**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**

10 September 2004

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL04/00061

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B05D 7/22  
US CL : 427/181

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 427/181, 189, 190, 191, 230, 235

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Martin, C. R. et al. Investigations of the Transport Properties of Gold Nanotubule Membranes J. Phys Chem. B February 2001, Vol. 105, pages 1925-1934.	1,3-8,10,16,18,24-26,28,30,32
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Y		2,9,11,17,19-21,23,29,27,31,33
Y	Martin, C.R. Nanomaterials: A Memberane-Based Synthetic Approach Science December 1994, Vol. 266, pages 1961-1966.	2,9,11,20,21,23,29,31,33
A	Hulteen, J.C. et al. Introducing Chemical Transport Selectivity into Gold Nanotubule Membranes J. Am. Chem. Soc. June 1998, Vol. 120, pages 6603-6604.	1-33
A	Jirage, K.B. et al. Effect of Thiol Chemisorption on the Transport Properties of Gold Nanotubule Membranes Anal. Chem. November 1999, Vol. 71, No. 21, pages 4913-4918.	1-33
A	Hou, Z. et al. Self-Assembled Monolayers on Electroless Gold Impart pH-Responsive Transport of Ions in Porous Membranes Langmuir December 1999, Vol. 16, pages 2401-2404.	1-33

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

30 June 2004 (30.06.2004)

Date of mailing of the international search report

05 AUG 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
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Alexandria, Virginia 22313-1450

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**INTERNATIONAL SEARCH REPORT**

PCT/IL04/00061

**Continuation of Item 4 of the first sheet:**

The title of the invention is not precise. The following new title has been provided:

**METHOD FOR PREPARING NANOTUBES FROM NANOPARTICLES AND NANOTUBES PRODUCED THEREBY**

**Continuation of B. FIELDS SEARCHED Item 3:**

EAST

American Chemical Society Journal Search

Elsevier Journal Search